

7 (a) A plastic rod is uncharged.

When the rod is rubbed with a woollen cloth, the rod becomes negatively charged.

Explain, in terms of particles, why the rod becomes negatively charged.

.....
.....
..... [2]

(b) Fig. 7.1 shows a negatively charged metal sphere S.

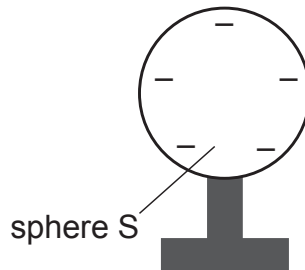


Fig. 7.1

There is an electric field surrounding S.

(i) State what is meant by an electric field.

.....
..... [1]

(ii) On Fig. 7.1, draw the pattern of the electric field surrounding sphere S and indicate its direction. [2]

(c) Fig. 7.2 shows a small negative charge Z placed near to sphere S.

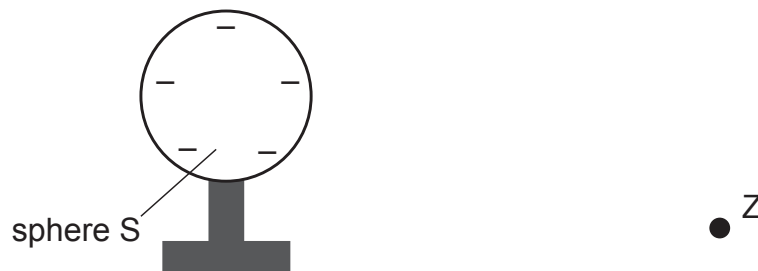


Fig. 7.2

Charge Z experiences a force due to the electric field surrounding S.

On Fig. 7.2, draw an arrow to show the direction of this force on Z.

[1]